Abstracts

Multi-wire microstrip interconnections: a systematic analysis for the extraction of an equivalent circuit

F. Alimenti, P. Mezzanotte, L. Roselli and R. Sorrentino. "Multi-wire microstrip interconnections: a systematic analysis for the extraction of an equivalent circuit." 1998 MTT-S International Microwave Symposium Digest 98.3 (1998 Vol. III [MWSYM]): 1929-1932.

A systematic analysis of the multi-wire microstrip interconnection is proposed in this work. A family of structures has been analyzed by considering single-, double- and triple-wire interconnections and by varying the typical geometrical parameters. The Finite Difference Time Domain (FDTD) method has been used for the electromagnetic simulation of these structures. The curvature of the wire has been modeled with a polygonal approximation and, in the multi-wire case, the wires have been assumed to be parallel. The computed scattering parameters have been then used to extract a low-pass /spl pi/-network equivalent to the interconnection. In this way the series inductance of the interconnection has been characterized as a function of the spacing between the wires. Finally the scattering parameters for single-, double- and triple-wire interconnections have been compared. This work proposes a method to derive accurate and efficient equivalent circuits of the multi-wire interconnections suitable for CAD implementation.

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